

Having thus described the invention, it is claimed:

1. A retainer ring for controlling the flow of welding wire from a coil of welding wire contained in a wire package having a package axis, the coil having a coil axis parallel to the package axis, a coil top transverse to said coil axis and radially inner and outer surfaces, said retainer ring comprising a substantially planar body for overlying the coil top, said body including an inner opening having an opening axis parallel to the coil axis, said opening having an edge, said body having an outer peripheral edge including a plurality of nodes which extend radially outwardly relative to said edge of said opening beyond the outer surface of the coil, adjacent ones of said nodes being joined by a node edge extending inwardly of the outer surface of the coil, and at least one of said nodes engaging the wire package for preventing said retainer ring from rotating relative to the package axis.
2. The retainer according to claim 1, wherein said node edge is arcuate and concave with respect to said outer peripheral edge.
3. The retainer according to claim 2, wherein said plurality of nodes is four nodes.
4. The retainer according to claim 2, wherein said plurality of nodes is eight nodes.
5. The retainer according to claim 1, wherein said nodes have arcuate radially outer end edges which are concave with respect to said inner opening.

6. The retainer according to claim 5, wherein said plurality of nodes is four nodes.
7. The retainer according to claim 6, wherein said node edge is arcuate are concave with respect to said outer peripheral edge.
8. The retainer according to claim 1, wherein said plurality of nodes is eight nodes.
9. The retainer according to claim 1, wherein said node edge is linear.
10. The retainer according to claim 9, wherein said plurality of nodes is four nodes.
11. The retainer according to claim 1, wherein said plurality of nodes is four nodes.
12. The retainer according to claim 1, wherein said node edge includes two inwardly curved edges which intersect at a central point between said adjacent ones of said nodes.
13. The retainer according to claim 12, wherein said plurality of nodes is eight nodes.
14. The retainer according to claim 1, wherein each of said nodes includes a pair of radially outer edges intersecting one another at an angle.

15. The retainer according to claim 14, wherein said outer edges are linear.

16. The retainer according to claim 14, wherein said angle is 90° .

17. The retainer according to claim 14, wherein said outer edges are arcuate.

18. A retainer ring for controlling the flow of wire from a coil of wire packaged in a four sided box having a box axis, the coil having a coil axis parallel to the box axis and radially inner and outer surfaces, said retainer ring comprising a planar body having an opening therethrough and radially inner and outer edges relative to the axis of the opening, said outer edge including eight nodes equally spaced apart about the outer edge and having outer ends radially beyond the outer surface of the wire coil, adjacent ones of said nodes being joined by a node edge extending between said outer ends and radially inwardly of the outer surface of the wire coil, and said nodes interengaging with the box to prevent said retainer ring from rotating relative to the box axis.

19. The retainer according to claim 18, wherein said nodes have arcuate, radially outer end edges which are concave with respect to said opening.

20. The retainer according to claim 18, wherein said nodes have radially outer edges intersecting one another at an angle.

21. The retainer according to claim 18, wherein said node edge includes two inwardly curved edges which are substantially of the same shape and intersect at a common central point between the adjacent ones of said nodes.

22. A retainer ring for controlling the flow of wire from a coil of wire contained in a wire package, the wire coil having an inner and an outer surface, said retainer ring comprising a substantially planar body having a substantially uniform thickness, said body including an opening and four nodes which extend radially away from said opening beyond the outer surface of the coil, each of said nodes being joined to an adjacent node by an inwardly extending node edge
5 therebetween and said nodes preventing said retainer ring from rotating relative to the wire package and preventing the wire from passing outside of said outer peripheral edge.

23. The retainer according to claim 22, wherein said nodes have arcuate, radially outer end edges which are concave with respect to said opening.

24. The retainer according to claim 23, wherein said nodes are equally spaced apart about said opening and said node edges are arcuate and convex relative to said opening.

25. The retainer according to claim 22, wherein said nodes are equally spaced apart about said opening.

26. The retainer according to claim 12, wherein said nodes have radially outer edges intersecting one another at an angle.

27. The retainer according to claim 26, wherein said node edge is linear.

28. The retainer according to claim 16, wherein said nodes are equally spaced apart about said opening.

29. The retainer according to claim 28, wherein said angle is 90° .

30. A package for containing and dispensing wire from a coil of wire, the wire coil having an axis, a radially outer surface about the axis providing an outer coil diameter, and axially opposite top and bottom ends defining a coil height, said package comprising an outer carton having a bottom and four planar side panels extending upwardly from said bottom a distance greater than said height, each said side panel having an inwardly facing side surface; an octagonal inner liner within said outer carton, said liner having eight vertically extending planar walls wherein every other one of said eight walls engages a portion of the inwardly facing side surface of a different one of said side panels of said outer carton, adjacent ones of said eight walls being joined at a liner corner; and a retainer ring engaging the top end of the wire coil, said retainer ring having a substantially planar body including an inner opening and an outer edge comprising a plurality of nodes extending radially outward beyond the outer surface of the wire coil, each of said nodes being joined to an

adjacent node by a node edge extending inwardly of the outer surface of the coil, at least one of said nodes interengaging at least one of said liner corners to prevent said retainer ring from rotating relative to said inner liner.

31. The package according to claim 30, wherein said nodes have arcuate, radially outer end edges which are concave with respect to said opening.

32. The package according to claim 31, wherein said node edge is convex with respect to said opening.

33. The package according to claim 32, wherein said coil of wire has a radially inner surface, the package further including an inner sleeve supporting the inner surface of the coil, said inner sleeve having an outside diameter and said opening of said retainer ring having a diameter greater than said outside diameter.

34. The package according to claim 30, wherein said nodes have radially outer edges intersecting one another at an angle.

35. The package according to claim 34, wherein said node edge is linear.

36. The package according to claim 35, wherein said coil of wire has a radially inner surface, the package further including an inner sleeve supporting the inner surface of the coil, said inner sleeve having an outside diameter and said opening of said retainer ring having a diameter greater than said outside diameter.

37. The package according to claim 34, wherein said radially outer edges are arcuate.

38. The retainer according to claim 37, wherein said node edge includes two inwardly curved edges which intersect at a common central point between adjacent nodes.

39. The retainer according to claim 38, wherein said plurality of nodes is eight equally spaced nodes.

40. A container for storing and dispensing a continuous wire from a coil of wire, the wire coil being donut-shaped and having an outwardly facing surface having an outer coil diameter, an inwardly facing surface having an inner coil diameter and top and bottom surfaces defining a coil height, said container comprising an outer carton having a rectangular bottom and side walls extending upwardly from said bottom, each said side wall having inwardly and outwardly facing surfaces; an inner liner including eight upwardly extending liner walls each having inwardly and outwardly facing surfaces, said inner liner having an octagonal cross-sectional configuration, every other one of said outwardly facing surfaces of said liner walls engaging a different one of said

10 inwardly facing surfaces of said sides walls, said inwardly facing surfaces of said liner walls
engaging the outwardly facing surface of the wire coil; and a substantially planar retainer ring having
an opening producing an inner edge and having an outer peripheral edge, said peripheral edge
including eight equally spaced nodes which extend radially outwardly beyond the outer surface of
the wire coil, each of said nodes being joined to an adjacent node by at least one inwardly extending
curvilinear node edge producing a gap between said peripheral edge and said inner liner, said retainer
15 ring being positioned on the top surface of the wire coil, and said nodes engaging at least one of said
liner walls to maintain said retainer ring substantially centered within said side walls of said outer
carton and to prevent said retainer ring from rotating relative to said inner liner.

41. The container according to claim 39, wherein said at least one node edge extends
inwardly of the outer surface of the wire coil.

42. The container according to claim 41, further including an inner sleeve supporting the
inner surface of the coil, said inner sleeve having an outside diameter and said opening of said
retainer ring being circular and having a diameter greater than said outside diameter.

43. The container according to claim 39, further including an inner sleeve supporting the
inner surface of the coil, said inner sleeve having an outside diameter and said opening of said
retainer ring being circular and having a diameter greater than said outside diameter.

44. The container according to claim 40, wherein said at least one node edge is two inwardly extending curved edges which intersect at a common central point between adjacent nodes.

45. A container for storing and dispensing a continuous wire from a coil of wire, the wire coil being donut-shaped and having an outwardly facing surface having an outer coil diameter, an inwardly facing surface having an inner coil diameter and top and bottom surfaces defining a coil height; said container comprising: an outer carton having a circular bottom wall and a cylindrical side wall extending upwardly from said bottom wall and having an inner surface, a plurality of supports equally spaced apart about said inner surface and extending upwardly therealong from said bottom wall, said supports engaging the outwardly facing surface of the wire coil, and a substantially planar retainer ring having an opening producing an inner edge and an outer peripheral edge including a plurality of nodes which extend radially outwardly beyond the outer surface of the wire coil, adjacent ones of said nodes being joined by an inwardly extending node edge, said retainer ring being positioned on the top surface of the wire coil, and at least one of said node edges engaging one of said supports to prevent said retainer ring from rotating relative to said side wall.

46. The container according to claim 45, wherein said nodes have arcuate radially outer edges which are concave relative to said opening.

47. The container according to claim 46, wherein said node edge is arcuate and convex relative to said opening.

48. The container according to claim 45, wherein said plurality of supports is four supports.

49. The container according to claim 48, wherein said plurality of nodes is four nodes.

50. The container according to claim 49, wherein said supports are cylindrical in cross-section transverse to said sidewall.

51. A retainer for controlling the unwinding of wire from a coil packaged in a box, the coil having an axis, axially opposite ends and an axially extending outer periphery about said axis and the box having wall means parallel to the coil axis, said retainer comprising a planar body for engaging against one end of a packaged coil, said body having an opening therethrough having an axis parallel to the axis of the packaged coil and an outer edge radially spaced from and extending about said opening, said outer edge comprising a plurality of circumferentially adjacent nodes equally spaced apart from one another about said opening and connecting edges between adjacent ones of said nodes, said nodes extending radially outwardly beyond the outer periphery of the packaged coil, and said connecting edges crossing said one end of the packaged coil radially inwardly of the outer periphery thereof.

52. The retainer according to claim 51, wherein said nodes have arcuate, radially outer end edges which are concave with respect to said opening.

53. The retainer according to claim 52, wherein said connecting edges are convex with respect to said opening.

54. The retainer according to claim 51, wherein said connecting edges are convex with respect to said opening.

55. The retainer according to claim 51, wherein said nodes have radially outer end edges intersecting one another at an angle.

56. The retainer according to claim 55, wherein said connecting edges are linear between said nodes.

57. The retainer according to claim 51, wherein said connecting edges are linear between said nodes.

58. The retainer according to claim 51, wherein the wall means of a box for packaging a coil includes wall panel means and post means inwardly adjacent the panel means and between adjacent ones of said nodes.

59. The retainer according to claim 58, wherein said posts are tubular and the connecting edges between adjacent nodes are convex with respect to said opening.

60. The retainer according to claim 51, wherein each of said connecting edges includes two inwardly curved edges which intersect at a common central point between adjacent ones of said nodes.

61. The retainer according to claim 60, wherein said two inwardly curved edges are concave with respect to said opening.